# DENSiTRON
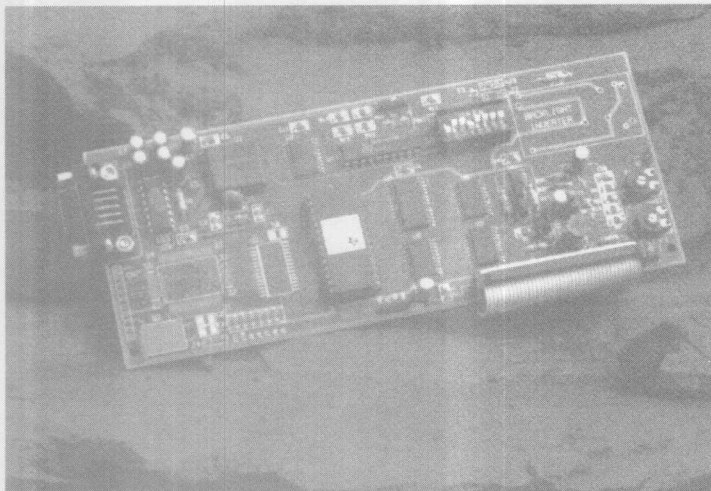
## SGI-01 Serial Interface
## for
## Small Graphic LCD Modules

Catalog No: Pre010

The new SGI-01 serial interface card simplifies communication with Densitron's small graphic LCD modules. This card features a powerful command set for drawing lines, circles, boxes, arcs, sectors and text with minimal code. Complex screen designs can be created easily. This greatly reduces the amount of time required for software design, reduces your costs and time to market.

Four basic font styles are built in; sizes range from 8 to 20 pixels high. Characters may be displayed as bold, italicized, underlined, mirrored, rotated or any combination thereof. Text and graphics may be mixed and displayed at the same time. Graphics can be created by using the drawing command set or by bit-mapping data directly to the display.

Either of two user selectable serial interfaces can be used: an RS232 bi-directional serial port with user selectable baud rates from 150-19,200 Baud, allows remote operation up to 65 feet (or further depending on the baud rate selected); an $I^2C$ synchronous serial bus can have up to eight SGI-01 cards and LCD modules each independently controlled on the same serial line.

The SGI-01 card fully supports Densitron's graphic LCD modules with built-in T6963C, HD61830 and HD61202 controllers. It provides all the necessary LCD drive voltages, signals and correct timing to interface to most of Densitron's small Graphic LCD modules up to 1/128 duty cycle (multiplex rate). The LCD drive voltage (-$V_{EE}$) is adjustable from -5 to -20V. The contrast voltage (-$V_O$) may be adjusted by the on-board contrast potentiometer or by external control.
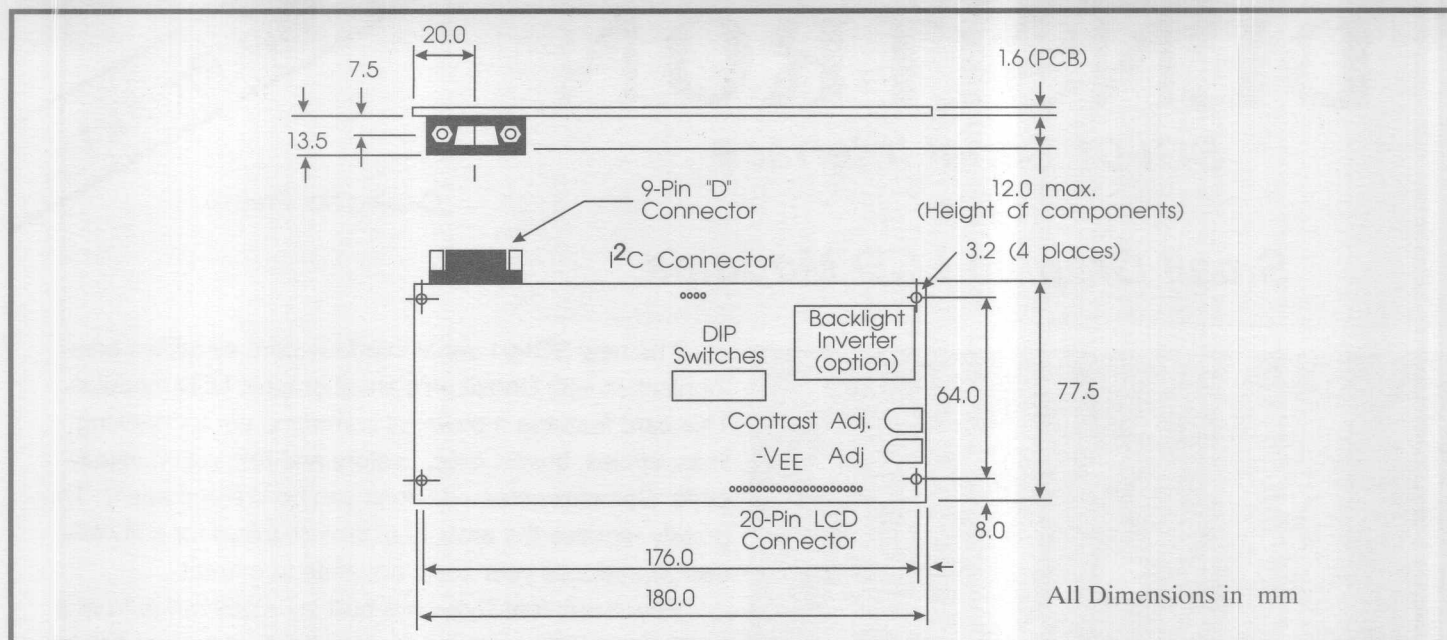
LCD module backlights may be controlled via software. An LED current limit resistor (9.4$\Omega$) or a DC-AC inverter is installed, depending on LCD module backlight type.

The SGI-01 has been designed as an intelligent serial interface, that saves you time and money and enables complex screens to be created and displayed with relative simplicity. Contact Densitron for a demonstration and product literature showing our extensive range of LCD modules and interface cards.

## FEATURES

- ❏ Allows serial interface to Graphic LCD modules up to 128 x256
- ❏ RS-232 or $I^2C$ compatibility
- ❏ 150 to 19.2K baud
- ❏ On-board negative voltage generator
- ❏ Supports LCD modules w/ T6963, HD61830 , or HD61202 controllers
- ❏ On-board T6963 option for non controller on-board LCD modules
- ❏ Software controlled backlight support
- ❏ Built-in Character Generator with variety of sizes and fonts
- ❏ Powerful command set for drawing lines, boxes, circles, etc.
- ❏ Piggy backs to selected 64x240 LCD modules

# DIMENSIONAL DRAWING



- 20.0
- 7.5
- 13.5
- 1.6 (PCB)
- 9-Pin "D" Connector
- 12.0 max. (Height of components)
- I²C Connector
- 3.2 (4 places)
- DIP Switches
- Backlight Inverter (option)
- Contrast Adj.
- -V$_{EE}$ Adj
- 64.0
- 77.5
- 20-Pin LCD Connector
- 8.0
- 176.0
- 180.0

All Dimensions in mm

## PART NUMBER SYSTEM

SGI - 01 - N - 00

| 1 | 2 | 3 |

1- PCB size for direct mate to selected 180 x 75mm 64 x 240 dot matrix LCD modules (for other sizes, contact Densitron Sales office)

2- Contoller option

N - No controller on-board

T - T6963 controller on-board (for displays without on-board controllers)

3- EL Inverter Option

00 - No inverter

10 - DAS5V10

14 - DAS5V14

(Consult display specification to match inverter to display)

## SPECIFICATIONS

|  | Min | Typ | Max |
|---|---|---|---|
| Input Voltage (VDC) | 4.75 | 5.0 | 5.25 |
| V$_{EE}$ Output (VDC) | -5.0 |  | -20.0 |
| Operating Temp (°C) | 0 |  | 40 |
| Storage Temp (°C) | -10 |  | 60 |

(Input Voltage is feed through to the display. V$_{EE}$ is generated on the SGI-01and adjusted to display specifications.)

Specifications subject to change without notice.

## DENSITRON INTERNATIONAL OFFICES